

REMARKS

Claims 1-21 stand rejected. Claims 1-14, 16, and 19-21 are rejected under 35 U.S.C. §103(a) as being unpatentable over US Patent No. 4,901,221 to Kodosky, in view of US Patent No. 5,627,979 to Chang, and in further view of admitted prior art. Claim 15 is rejected under 35 U.S.C. §103(a) as being unpatentable over Kodosky in view of Chang and further in view of US Patent No. 5,481,741 to McKaskle. Claims 17 and 18 are rejected under 35 U.S.C. §103(a) as being unpatentable over Kodosky in view of admitted prior art and further in view of McKaskle. Claims 1, 3, 4, and 6 are amended and new claims 22-30 are added. No new matter is added by way of this response.

Claim Rejections

Amended claim 1 is directed to a method of block diagram modeling in a data processing system that includes in a first block, performing an index search operation by receiving a first value indicative of an index into a look-up table and generating information indicative of the location of the first value relative to a predefined domain of possible indexed values that define regions; in a second block, receiving the information generated by the first block; and using the information received in the second block to determine an output value used with a graphical block in a graphical model, a processing engine operating with the graphical model, a compiler, a simulator, a model constructor/editor, a code generator, a display, or a device. Kodosky, Chang and admitted prior art, alone or in any reasonable combination, do not disclose or suggest these features.

For example, Kodosky, Chang and admitted prior art do not disclose or suggest in a first block, performing an index search operation by receiving a first

value indicative of an index into a look-up table and generating information indicative of the location of the first value relative to a predefined domain of possible indexed values that define regions, as required by amended claim 1. The Examiner correctly indicates that Kodosky does not disclose this feature on page 4 of the Office Action wherein the Examiner states "Kodosky does not explicitly disclose look up table and index." The Examiner appears to then contradict his position regarding Kodosky on page 3 of the Office Action wherein the Examiner alleges that Kodosky discloses "in a first block, receiving a first value indicative of an index into a lookup table" (Kodosky, col. 3, lines 61-63) and "generating information indicative of the location of the first value relative to a predefined domain of possible indexed values that define regions" (Kodosky, col. 8, lines 58-59). Applicant respectfully disagrees with the Examiner's characterization of Kodosky at col. 3, lines 61-63 and col. 8, lines 50-54.

Kodosky, at col. 3, lines 61-63, recites:

The system also includes an execution subsystem for assigning respective values for the one or more input variables and for executing the execution instructions to produce respective values for the one or more output variables.

This portion of Kodosky discloses an execution subsystem for assigning respective values to one or more input variables. This portion of Kodosky does not disclose or suggest performing an index search operation by receiving a first value indicative of an index into a look-up table, as required by amended claim 1.

Kodosky, at col. 8, lines 58-59, recites:

The graphical representations of input controls and output indicators are stored in a memory library, and a user may select from among a variety of different graphical representations of input controls and output indicators in order to construct a panel display which conforms to a user's intuitive understanding of how the instrument 60 is controlled and how it provides data.

This portion of Kodosky discloses graphical representations that are used to construct a panel display. This portion of Kodosky does not disclose or suggest generating information indicative of the location of the first value relative to a predefined domain of possible indexed values that define regions, as further required by amended claim 1.

The Examiner alleges that Chang cures defects of Kodosky with respect to claim 1 by disclosing a table to access information stored using various types of indexes, record identifiers, link fields, and pointers at col. 3, lines 39-50 and col. 4, lines 19-21 (Office Action, page 4). Applicant respectfully disagrees.

Chang, at col. 3, lines 39-50, recites:

The hierarchical data model, similar to the network data model, provides fixed-length records composed of data fields of various types, indexes, record identifiers and link fields, and pointer structures. However, the hierarchical data model limits the structure used to represent the relationship of records to tree structures. A hierarchical data store schema consists of a set of tree structures of segments (each tree structure defined by a pointer structure known as a Program Communication Block or PCB), wherein each segment consists of fields, and wherein certain fields may be keys (indexes), and wherein certain segments may be links or pointers to other segments (pointer segment).

This portion of Chang discloses a hierarchical data model that provides fixed length records that can be composed of data fields of various types, indexes, record identifiers and link fields, and pointer structures. This portion of Chang does not disclose or suggest performing an index search operation by receiving a first value indicative of an index into a lookup table, as required by amended claim 1.

Chang, at col. 4, lines 19-21, recites:

A table may contain as many foreign keys as links it requires to relate it to other tables with which it has relationships.

This portion of Chang discloses a table that may contain many foreign keys as links.

This portion of Chang does not disclose or suggest performing an index search

operation by receiving a first value indicative of an index into a lookup table, as required by amended claim 1.

Moreover, the admitted prior art does not cure the shortcomings of Chang or Kodosky with respect to performing an index search operation by receiving a first value indicative of an index into a look-up table, as required by amended claim 1. In addition, the admitted prior art does not cure the shortcomings of Chang and Kodosky with respect to generating information indicative of the location of the first value relative to a predefined domain of possible indexed values that define regions, as further required by amended claim 1.

Kodosky, Chang and admitted prior art, alone or in any reasonable combination, do not disclose or suggest still other features of amended claim 1. For example, Kodosky, Chang and the admitted prior art do not disclose or suggest in a second block, receiving the information generated by the first block and using the information received in the second block to determine an output value used with a graphical block in a graphical model, a processing engine operating with the graphical model, a compiler, a simulator, a model constructor/editor, a code generator, a display, or a device, as required by amended claim 1. The Examiner alleges that Kodosky discloses this feature at col. 13, lines 29-30, Fig. 18 and its related description, and at col. 13, lines 49-51 (Office Action, page 3). Applicant respectfully disagrees.

Kodosky, at col. 13, lines 14-32 (which includes Fig. 18 discussion as well as col. 13, lines 29-30), recites:

Referring now to the illustrative drawings of FIG. 18, there is shown a block diagram 186 of an exemplary data flow system. The block diagram 186 includes three respective input registers 188, 190 and 192 which provide an accumulation of input data. As soon as all input data are present and output of AND gate 194 will become TRUE, and computation and/or control element 196 will begin computation. The computation element 196 will begin generating output data which are stored in respective output registers 198, 200

and 202. When all output data are available, an output token will be generated by the computation element 196 indicating that output data are available for transmission to a next system (not shown). It will be appreciated that the computation element can be a combination of more than one subsystem (not shown).

This portion of Kodosky discloses a block diagram that includes output registers that provide an accumulation of input data. This portion of Kodosky further discloses an output token that indicates data are available for transmission to a next system. This portion of Kodosky does not disclose or suggest receiving the information generated by the first block and using the information received in the second block to determine an output value used with a graphical block in a graphical model, a processing engine operating with the graphical model, a compiler, a simulator, a model constructor/editor, a code generator, a display, or a device, as required by amended claim 1.

Kodosky, at col. 13, lines 49-51, recites:

More particularly, execution instructions can be constructed by constructing a visual display in which at least one input variable produces at least output variable according to a displayed procedure.

This portion of Kodosky discloses a visual display in which an input variable produces at least an output variable according to a displayed procedure. This portion of Kodosky does not disclose or suggest receiving the information generated by the first block and using the information received in the second block to determine an output value used with a graphical block in a graphical model, a processing engine operating with the graphical model, a compiler, a simulator, a model constructor/editor, a code generator, a display, or a device, as required by amended claim 1. Chang and the admitted prior art do not cure the defects in Kodosky with respect to the above feature of amended claim 1.

Since Kodosky, Chang, and the admitted prior art, alone or in any reasonable combination, do not disclose or suggest the features of claim 1, a 35 U.S.C. §103(a) rejection of claim 1 based on these references is improper and should be withdrawn. Applicant respectfully requests that the 35 U.S.C. §103(a) rejection of claim 1 be reconsidered and withdrawn.

Claims 2-16 depend from claim 1 and are allowable for at least the reasons presented above with respect to claim 1. Reconsideration and allowance of claims 2-16 is respectfully requested.

Independent claims 20 and 21 recite features similar to the features of claim 1. Claims 20 and 21 are allowable for at least reasons similar to those presented above with respect to claim 1. Reconsideration and allowance of claims 20 and 21 are respectfully requested in view of the foregoing remarks.

The Examiner rejects independent claim 19 on the grounds used to reject independent claims 1, 20 and 21. Applicant respectfully points out that claim 19 does not recite features analogous to the features of claims 1, 20 and 21. Therefore the grounds, stated on pages 3-4 and page 11 of the Office Action that are used to reject claim 19 are improper. In order to expedite prosecution, Applicant will address claim 19 with respect to Kodosky, Chang and the admitted prior art.

Claim 19 recites in one or more electronic devices, a method of graphical block diagram processing that includes maintaining in a block library an interpolation block that uses output of one or more pre-lookup index search blocks; and enabling a user to use the pre-lookup index search and interpolation blocks to build a graphical block diagram model.

Kodosky, Chang and the admitted prior art, alone or in any reasonable combination, do not disclose or suggest maintaining in a block library an interpolation

block that uses output of one or more pre-lookup index search blocks, as required by claim 19. Moreover, Kodosky, Chang and the admitted prior art, alone or in any reasonable combination, do disclose still other features of claim 19, such as enabling a user to use the pre-lookup index search and interpolation blocks to build a graphical block diagram model.

Since Kodosky, Chang, and the admitted prior art, alone or in any reasonable combination, do not disclose or suggest the features of claim 19, a 35 U.S.C. §103(a) rejection of claim 19 based on these references is improper and should be withdrawn. Applicant respectfully requests that the 35 U.S.C. §103(a) rejection of claim 19 be reconsidered and withdrawn.

The Examiner rejects claims 17 and 18 under 35 U.S.C. §103(a) as being unpatentable over Kodosky in view of admitted prior art and further in view of McKaskle

Independent claim 17 is directed to a method of graphical block diagram processing that includes receiving as an input a block diagram model that includes interpolation lookup blocks which each perform interpolated table lookup, the interpolation lookup blocks are connected to at least one index search block which performs index search operations, the index search block providing an input value and breakpoint data set to any connected interpolation lookup block; detecting if the interpolation lookup blocks have shared input values and breakpoint data sets; and interpreting the block diagram model as if the block diagram model included separate index search blocks for each of the interpolated lookup blocks. Kodosky, Chang and the admitted prior art, alone or in any reasonable combination, do not disclose or suggest at least one of these features.

For example, Kodosky, the admitted prior art and McKaskle do not disclose or suggest receiving as an input a block diagram model that includes interpolation lookup blocks which each perform interpolated table lookup, the interpolation lookup blocks are connected to at least one index search block which performs index search operations, the index search block providing an input value and breakpoint data set to any connected interpolation lookup block, as required by claim 17. The Examiner alleges that this feature is disclosed by Kodosky at col. 3, lines 50-51, col. 3, line 54, and col. 3, lines 61-63 (Office Action, page 13). Applicant respectfully disagrees.

Kodosky, at col. 3, lines 50-54, recites:

The present invention provides a system for modelling a process. A process typically can be characterized by one or more input variables and one or more output variables. The system includes a computer. It also includes an editor for displaying at least one diagram and for constructing execution instructions.

This portion of Kodosky discloses a modeling system that includes a computer and an editor, where the system characterizes a process that includes one or more input variables and one or more output variables. This portion of Kodosky does not disclose or suggest receiving as an input a block diagram model that includes interpolation lookup blocks which each perform interpolated table lookup, the interpolation lookup blocks are connected to at least one index search block which performs index search operations, the index search block providing an input value and breakpoint data set to any connected interpolation lookup block, as required by claim 17.

As discussed above in connection with claim 1, col. 3, lines 61-63 of Kodosky discusses an execution subsystem for assigning respective values to one or more input variables. Col. 3, lines 61-63 of Kodosky in no way discloses or suggests receiving as an input a block diagram model that includes interpolation lookup blocks which each

perform interpolated table lookup, the interpolation lookup blocks are connected to at least one index search block which performs index search operations, the index search block providing an input value and breakpoint data set to any connected interpolation lookup block, as required by claim 17.

The Examiner admits that "Kodosky does not explicitly disclose detecting if the interpolation lookup blocks have shared input values and breakpoint data sets," (Office Action, page 13). The Examiner relies on McKaskle to remedy the shortcomings of Kodosky with respect to this feature of claim 17 (Office Action, pages 13 and 14). The Examiner relies on col. 33, lines 49-52 of McKaskle to support the above allegation. Applicant respectfully disagrees with the Examiner's characterization of McKaskle.

McKaskle, at col. 33, lines 49-52, recites:

A "breakpoint" may be set so that a reserved VI enters its "suspended" state when it is about to execute. "Suspended" is similar to idle in that the VI can be run interactively one or more times.

This portion of McKaskle discloses a breakpoint that is used to cause a reserved VI to enter a suspended state when the VI is about to execute. The breakpoint of McKaskle has does not pertain to a "breakpoint data set" as recited in claim 17. Therefore, McKaskle cannot disclose or suggest receiving as an input a block diagram model that includes interpolation lookup blocks which each perform interpolated table lookup, the interpolation lookup blocks are connected to at least one index search block which performs index search operations, the index search block providing an input value and breakpoint data set to any connected interpolation lookup block, as required by claim 17.

Since Kodosky, the admitted prior art and McKaskle do not disclose or suggest features of claim 17, a 35 U.S.C. §103(a) rejection of claim 17 based on

Kodosky, the admitted prior art and McKaskle is improper. Applicant respectfully requests reconsideration and withdrawal of the 35 U.S.C. §103(a) rejection of claim 17.

Claim 18 depends from claim 17 and is allowable for at least the reasons presented above with respect to claim 17. Reconsideration and allowance of claim 18 is respectfully requested.

New Claims

Applicant believes new claims 22-30 recite features not disclosed or suggested by Kodosky, Chang, McKaskle, or the admitted prior art, alone or in any reasonable combination. Allowance of claims 22-30 is respectfully requested.

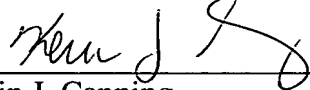
CONCLUSION

In view of the foregoing remarks, Applicants respectfully request withdrawal of the outstanding rejections and the timely allowance of this application.

To the extent necessary, a petition for an extension of time under 37 C.F.R. §1.136 is hereby made. Please charge any shortage in fees due in connection with the filing of this paper, including extension of time fees, to Deposit Account 12-0080 and please credit any excess fees to such deposit account.

Dated: November 6, 2006

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